

University of Pavia

**Ph.D. School in Electronics, Computer Science and Electrical Engineering
Ph.D. School in Microelectronics**

An Outlook into the Future of Spatial Resolution in PET

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Abstract: Despite the steady improvement since its introduction, spatial resolution has remained the main weakness of positron emission tomography (PET) relative to the other whole-body medical imaging modalities, such as X-ray computed tomography (CT) and magnetic resonance imaging (MRI). With the most recent pixelated detector technology, spatial resolution is nearing what is considered nowadays as the physical limit of PET. While time-of-flight PET provides improvement of the contrast-to-noise ratio and further increases the unequaled picomolar sensitivity of PET, we postulate that ultra-fast (~10 ps) TOF-PET will provide an opportunity to break the physical barrier of spatial resolution, with the potential of making whole-body PET resolution comparable to that of its complementary medical imaging modalities. The talk will review the current state of the art and discuss the prospects and requirements for further progress in PET spatial resolution.

Organizer

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Ph.D. Coordinators

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The seminar will take place in English
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